

Introduction

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The Chemical Pathology Branch of the National Toxicology Program has sponsored a number of conferences and symposia on subjects of interest in rodent histopathology. This conference is a result of a combined effort with Systemic Toxicology Branch to present the latest information of cytophysiology and hormonal interaction, structure and function, testing strategies and methods, and a discussion of toxicity and carcinogenicity in the male reproductive system. As the focus for sub-chronic and 2-year carcinogenicity studies broadens to include toxicity end points in addition to carcinogenesis, discussions of this nature are increasingly useful. The initial presentations highlight new findings in the physiology of membrane receptors and endocrine/paracrine communication for the system as a whole, followed by the latest concepts of the physiology for the major cell types. The usefulness of the male rabbit model for reproductive studies and its advantages for obtaining longitudinal semen samples is discussed by D. Morton.

The paper by K. Mitumori includes the classification and incidence of neoplasms in the male reproductive system of rats and mice from the NTP data base and criteria used to differentiate hyperplastic and neoplastic

lesions. It becomes clear from this paper that there are a lack of treatment-induced neoplasms in the male reproductive system of these species. The near-universal presence of interstitial cell tumors in all treated and control Fischer 344 rats was discussed. Other papers by B. C. Bullock and L. W. K. Chung focus on the effects of diethylstilbestrol and cell-cell communication in tumor formation. The preputial gland tumor transplantation data are presented in a paper by R. R. Maronpot, and the extrapolation of rodent reproductive studies to the field of human medicine is related by P. K. Working. Dr. Working's paper demonstrates that most of the methods used to evaluate reproductive toxicity in rodents are not readily applicable to humans. Rabbits, by providing longitudinal semen samples, may provide more comparable material for analysis, although the correlation between rabbit and man has yet to be fully established.

Taken together, these papers examine an organ system whose response to toxicants can be both cell loss and unregulated growth and neoplasia. These different responses imply a variety of mechanisms involved in the tissue reactions. We hope that the papers from this symposium clarify some of the current problems and concepts and stimulate new approaches to defining the early steps in the response to toxicants.

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